Department of Primary Industries

primefact

African Horse Sickness

December 2020, Primefact PUB20/911, First edition

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Background

African horse sickness is the most serious known viral disease of horses, resulting in up to 95% mortality. It is an **exotic** disease which has never been reported in Australia. African horse sickness is listed as **prohibited matter** in New South Wales. If you suspect African horse sickness you must report it immediately by phoning the Emergency Animal Disease Hotline on 1800 675 888 at any time, or by phoning your Local Land Services on 1300 795 299 during business hours.

Figure 1: Conjuctival swelling (oedema) and redness(erythema) - [Source: Camilla Weyer, SAEPS]

What causes African Horse Sickness?

African horse sickness is caused by a virus in the genus *Orbivirus*. This genus also contains the Bluetongue virus which causes clinical disease of sheep and other ruminants in many parts of the world. Within the African horse sickness virus species there are nine known distinct variations or serotypes. Serotypes 1–8 are all highly pathogenic for horses and cause 90–95% of mortality but serotype 9 is slightly less pathogenic resulting in mortality rates of about 70%.

Susceptible species

All members of the horse family (horses, mules, donkeys, zebras) are susceptible, with horses generally experiencing severest disease and highest mortality rates. Zebras become infected but generally have mild or subclinical disease. Dogs are also susceptible, with the most likely route of infection believed to be by eating infected horse meat.

African horse sickness does not affect humans.

Typical signs of African Horse Sickness in horses

- Fever (39-41°C) and sweating
- Spasmodic coughing
- Swelling around the head, and particularly above the eyes. Also seen in the neck, which may make it difficult to swallow
- Reddening of the membranes of the gums and eyes, these may appear as red spots
- Colic signs such as rolling or pawing
- Difficulty breathing with wide open nostrils and extended neck. The breathing rate can be in excess of 50 breaths per minute (with the presence of defined stomach muscles due to forced expiration)
- A frothy discharge is seen from the nostrils in the terminal stages of the disease and death then usually occurs within a few hours.

Not all cases show all these signs and signs may vary in severity.

Figure 2 Horse, head: Marked swelling of supraorbital fossa .[Source: OVI/ARC]

Figure 3 Horse, eye: Conjunctivitis, severe oedema. [Source: OVI/ARC]

Figure 4 Horse, nostrils: Abundant foamy nasal discharge. [Source: PIADC]

How is African Horse Sickness spread?

The African horse sickness virus is an arbovirus – that is, it is transmitted between susceptible animals by bloodsucking insects. African horse sickness virus is spread primarily by *Culicoides* midges. Virus circulation is usually seasonal and associated with hot and humid weather and abundance of the insect vectors.

African horse sickness virus is not spread by aerosol or direct contact between infected and noninfected animals.

The disease is spread by tiny midges, also called *Culicodes*

Geographic spread of African Horse Sickness overseas

African horse sickness is endemic in central and southern Africa, where zebra act as reservoir hosts of infection but usually do not show clinical signs. There has been occasional spread to northern Africa and intermittent outbreaks in southern Europe and the Middle East.

Malaysia (September 2020) and Thailand (March 2020) have recently reported outbreaks of African horse sickness (Serotype 1). This is the first time that African horse sickness has spread into the Asia-Pacific region.

How could African Horse Sickness spread to Australia?

The most likely route of African horse sickness introduction to Australia is via windborne spread of infected *Culicoides* vectors from Asia to northern Australia. *Culicoides imicola*, the only known vector for African horse sickness virus that is present in Asia, is not present south

of Thailand so does not pose an immediate threat to Australia. Of more concern is the potential for other, more widespread species to act as vectors of African horse sickness virus and distribute the virus throughout their geographic range.

Australia has several endemic *Culicoides* species that may be competent biological vectors for African horse sickness virus. Northern Australia has a large population of feral horses and donkeys in the endemic *Culicoides* areas. If African horse sickness became established in this feral equid population, eradication would be very difficult.

Preparedness for an outbreak of African Horse Sickness

Prevention

Australia has strict import conditions for live horses and other equids, genetic material, vaccines and commodities that may be contaminated with insect vectors such as *Culicoides*. This includes insecticide spraying or treatment of incoming aircraft, inspection of incoming cut flower consignments and insect traps on livestock ships.

Early warning and detection

New South Wales Department of Primary Industries (NSW DPI) contributes to the National Arbovirus Monitoring Program (NAMP) which monitors the distribution and abundance of the *Culicoides* vectors which may be able to transmit African horse sickness.

Response

State and territory governments including NSW DPI, the Australian government and the horse industry have developed an Australian Veterinary Emergency Plan (AUSVETPLAN) for African horse sickness which would guide the response if an outbreak occurred in Australia. African horse sickness is covered by the Emergency Animal Disease Response Agreement (EADRA) as a Category 3 cost-shared disease, which means that the government and the horse industry would each pay for 50% of an emergency disease response.

According to the African horse sickness AUSVETPLAN (1996) "vaccination will play an important role in the control and eradication of African horse sickness if the virus is present in the vector population and the disease becomes widespread". The African horse sickness AUSVETPLAN is currently under review and the writing group is considering vaccination options.

Further information is available at the African Horse Sickness-OIE-Asia web-page.

All images courtesy of OIE – World Organisation for Animal Health

PUB20/911